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Numerical simulation of motility patterns of the small bowel. II. Comparative pharmacological validation of a mathematical model

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Abstract

A model of a locus of the small bowel, described earlier by the authors was validated in a comparison of the results of numerical simulations of pharmacological compounds to their effects in biological studies. The actions of the following four classes of drugs were simulated, those: (i) acting on the sarcoplasmic reticulum, (ii) altering the permeability of L- and T-type Ca2+ channels on the smooth muscle membrane, (iii) motilides, and (iv) benzodiazepines. The strong qualitative resemblance between the theoretical and experimental results supports the robustness of the model.

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